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MOOD STATES AND THE REPORTING OF LIFE CHANGES. (U)

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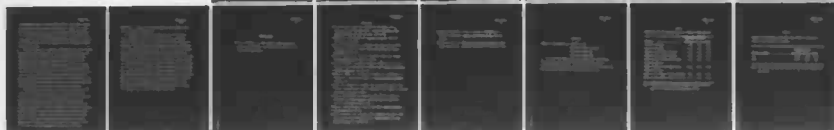
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Mood States and the Reporting of Life Changes

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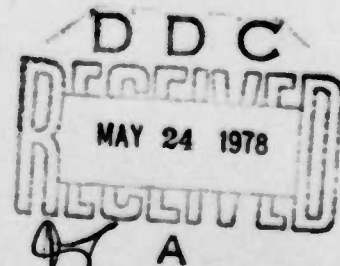
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The relationship between mood state and self-reports of life changes was examined. In the present study, several investigations have shown correlations between depression and life changes, yet the direction of this relationship is unclear. By experimentally manipulating the depressive mood state in the present study, it was possible to assess the impact of mood state on responding to a measure of life stress; the Life Experiences Survey (LES). Subjects completed two life stress protocols: One during an introductory psychology		

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class session, and a second after their participation in a mood induction technique. The results indicated that the depressive mood state was successfully manipulated, yet mood state did not differentially affect responses to the LES. These findings suggest that life stress may be causally related to depression, rather than depressive states increasing the probability of endorsement on life stress inventories. Further corroborating evidence was provided by examining individual differences in Sensation Seeking. Subjects identified as high sensation seekers were particularly sensitive to the mood manipulation, however, the LES protocols of high sensation seekers were not affected by mood state.

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### Mood State and the Reporting of Life Changes

The relationship between life stress, defined in terms of accumulated life changes, and the development of human problems has been investigated in a number of studies. As a result of this research, life stress has been linked to a variety of physical and psychological difficulties (cf., Dohrenwend & Dohrenwend, 1974). While the research findings provide interesting data regarding the correlates of life change, certain issues remain to be resolved. One major question, common to most life stress studies, relates to the issue of causality and directionality of the observed relationship. It is unclear whether the significant correlations often obtained between life stress scores and various indices of physical and psychological disorders indicate that life stress results in the development of such conditions or whether persons displaying these conditions simply tend to report experiencing a greater number of events, perhaps to justify their state (Brown, 1974). Given that most life stress studies require subjects to give retrospective reports, their psychological state might affect the accessibility of certain events in memory (e.g., Isen, Shaker, Clark, & Karp, 1978). It seems possible that mood state may differentially influence memory for positive and negative life changes. Although it is difficult to sort out the nature of the relationships found in correlational studies, attempts to do so are necessary if research in the area of life stress is to progress. The present study was therefore designed to assess the effects of mood state on responding to a specific measure of life stress.

Life stress has most often been assessed by the Schedule of Recent Experiences (SRE), a measure developed by Holmes and Rahe (1967). Subjects respond to this inventory by indicating which of forty-three life changes they

experienced during the past year. The SRE is scored by summing values, termed life change units, associated with each event the respondent endorsed. These values were determined by gathering data (in the form of mean ratings) from subjects instructed to judge the degree of social readjustment necessitated in the experiencing of these forty-three life events. Construction of the SRE was based on the assumption that life stress can be conceptualized in terms of change per se, regardless of the desirability of that change.

The assumption that both positive and negative life changes are stressful has come into question because of the results of several recent studies. Vinokur and Selzer (1975), for example, examined the relationship between a variety of dependent measures (e.g., tension, distress, suicidal proclivity, drinking, traffic accidents) and three different indices of life stress. These indices, derived from a modified version of the SRE, included the number of events endorsed, the sum of the life change units (using the Holmes and Rahe scoring system), and the sum of respondent's self-ratings of the degree of readjustment required by each event. These scores were derived separately for those events rated as desirable and those rated as undesirable. Vinokur and Selzer found that only undesirable events were substantially correlated with problem behavior and that this relationship was strongest when the individual's self-ratings of desirability were taken into account. The standard SRE scoring method was found to be insensitive to this crucial dimension of desirability and the authors emphasized the need for self-ratings of desirability in future life stress research.

Taking into account the findings obtained by Vinokur and Selzer (1975), Sarason, Johnson, and Siegel (in press) developed a new measure of life stress that provides for the separate assessment of positive and negative life changes and for individualized ratings of the impact of these changes. In this inventory,



subjects respond to a list of fifty-seven items by indicating those events experienced in the past year. Subjects are then asked to rate each event experienced, indicating whether the event was perceived as desirable or undesirable and the degree of impact these events had on their lives at the time they occurred. Ratings are on a scale of -3 (negative event, great impact) to +3 (positive event, great impact). By summing the impact ratings of those events designated as positive and those rated as negative, it is possible to obtain positive and negative life change scores, respectively. Preliminary studies with the Life Experiences Survey (LES) are supportive of the findings of Vinokur and Selzer in that life changes seen as undesirable by the respondent have been found to be related to indices of psychological maladjustment, physical illness, and academic difficulties, while positive changes seem to be unrelated to such variables. Normative data, reliability coefficients, and personality correlates of the LES have been reported by Sarason, Johnson, and Siegel (in press). Despite the methodological advantages of allowing respondents to rate the desirability and impact of life events experienced, the question of whether psychological states might, in fact, influence life stress scores would seem especially pertinent considering that scores on this measure reflect the reporting of events as well as ratings of the impact of events.

The present study examined the influence of depressive mood state on responding to the Life Experiences Survey. The effect of mood state on both the number of events reported and the respondent's rating of the impact of specific events was examined. The effect of depression on responding to the LES was considered for two reasons. First, numerous investigations have found life stress to be significantly correlated with measures of depression (Paykel, Myers, Dienelt, Klerman, Linderthal, and Pepper, 1969; Sarason, Johnson, and Siegel, in press; Vinokur and Selzer, 1975) yet have not provided information

regarding the directionality of this relationship. Second, as a result of procedures developed by Velten (1968), it was possible to manipulate experimentally the depressive mood state and examine subsequent responses to the LES. It was assumed that if life stress scores, as measured by the Life Experiences Survey, are subject to distortion created by respondent's mood state, then induced mood states would be expected to result in an alteration of responses to the LES. On the other hand, if the observed correlation between mood state and life stress reflects a relationship in which the accumulation of life changes leads to changes in general mood, inducing a transient mood state should have no effect on responding.

A second question of interest in this study was the relationship between sensation seeking and responsiveness to mood manipulations. The Sensation Seeking Scale (Zuckerman, Kolin, Price, and Zoob, 1964) assesses the tendency for individuals to engage in thrill-seeking, risk-taking, and novel behavior and is thought to reflect the individual's optimal level of stimulation. High sensation seekers seem to seek stimulation while low sensation seekers attempt to minimize it. It was anticipated, therefore, that individuals high in sensation seeking would become more involved than low scorers in the experimental exercise of manipulating their own mood state in that this exercise represents a novel and stimulating experience. In addition, if life stress scores are subject to distortion created by respondent's mood state, this effect should be most evident among individuals especially sensitive to mood manipulations, such as high sensation seekers.

#### Method

Thirty-eight introductory psychology students served as subjects in this study. Each subject had completed the Life Experiences Survey (LES) and the Sensation Seeking Scale (Zuckerman, et. al., 1964) about six weeks prior to the



experimental session. Subjects were assigned randomly to one of three mood induction conditions. Each subject participated in the experiment individually.

Prior to the mood manipulation, the subject was given the General form of the Multiple Affect Adjective Check List (Zuckerman & Lubin, 1965) to complete. The Multiple Affect Adjective Check List (MAACL) is a self-administered test which provides measures of three clinically relevant negative affects: anxiety, depression, and hostility. The General form, which is essentially a trait measure, instructs respondents to check words describing how s/he generally feels; the Today form, which is a state measure, instructs the respondent to describe how s/he feels today. After completing the General measure, the experimenter explained to the subject that the study was an examination of peoples' ability to talk themselves into moods. This procedure required the reading aloud of a series of self-referent statements and attempting to concentrate on and experience the mood portrayed in each statement. Subjects first read several instruction cards aloud, to familiarize themselves with reading from cards, and then read the series of mood statements. Each statement was typed in a separate 5 x 8 card and the subject was handed one statement every 20 seconds.

The mood induction technique, as developed by Velten (1968), contains a separate set of sixty self-referent statements referring to the mood states of elation and depression and sixty self-referent statements that are neutral in content. Velten has shown that this technique reliably induces changes in mood state as measured by self-report (MAACL) and by theoretically related tasks such as writing speed, distance approximation, decision time, and word association. Hale and Strickland (1976) have also corroborated the usefulness of this technique. Pre-testing with the mood manipulation showed that it was feasible to use forty statements, rather than sixty, without impairing the effectiveness of the mood manipulation. In fact, subjects frequently reported boredom when they were required to read the entire set of sixty statements in twenty second intervals.

Velten's instruction were also changed slightly in order to make them easier to read and less repetitious. In addition, pre-testing indicated that males and females were equally receptive to the mood induction technique. Velten (1968) used only females in his study as previous research (Velten & De Nike, Note 1) showed a trend for sex differences.

After reading the forty self-referent statements, the subject was given a second LES to complete. Following the administration of the LES, the subject completed two tasks, counterbalanced for order, which served as checks on the effectiveness of the mood manipulation. These tasks included the Today form of Multiple Affect Adjective Check List (Zuckerman & Lubin, 1965) and a digit writing task in which the individual was given 60 seconds to write down as many digits as possible, in descending order from 100. Both of these tasks have been shown by Velten (1968) to be sensitive to changes brought about by the mood induction technique. When the subject had completed these two tasks, s/he was carefully debriefed. Special attention was given to the subjects in the depression condition to insure that they were able to talk themselves out of the mood as easily as they had talked themselves into it. The experimenter emphasized the transient nature of mood states and released the subject only after he felt comfortable that any lingering depression had been relieved.

### Results

Life stress and general depression. Pearson product-moment correlations were computed between life change scores and general depression, as measured by the Multiple Affect Adjective Check List (MAACL). The data from this experiment were combined with data for an additional group of subjects ( $N=82$ ), also drawn from introductory psychology courses and who had completed the same questionnaire as part of another study. The results yielded a significant negative correlation between positive life change and depression,  $r(121) = -.18$   $p < .025$ , and a marginally significant correlation in the opposite direction between

negative life change and depression,  $r(121) = .13$ ,  $p < .07$ . The same pattern of results also emerged on the general measures of anxiety and hostility. Anxiety was negatively correlated with positive change,  $r(121) = -.18$ ,  $p < .025$ , and positively correlated with negative change,  $r(121) = .22$ ,  $p < .01$ . General hostility was uncorrelated with positive change, but was significantly correlated with the accumulation of negative life change,  $r(121) = .23$ ,  $p < .005$ .

Manipulation effectiveness. One-way analyses of variance on responses to the Today form of the MAACL indicated that the mood manipulation had the intended effect,  $F(1, 36) = 3.29$ ,  $p < .05$  for anxiety,  $F(1, 36) = 5.50$ ,  $p < .01$  for hostility, and  $F(1, 36) = 9.39$ ,  $p < .001$  for depression. Orthogonal contrasts showed that subjects in the depression condition were significantly higher in anxiety than those in the elation condition and significantly higher than both the elation and the control subjects in hostility and depression. While not significant ( $p = .25$ ), the elation group wrote an average of 52 digits, the neutral group wrote 50 digits, and the depression group wrote 46 digits. Analyses of order effects showed that mean responses on both the MAACL and the digit writing were unaffected by the order in which the tasks were administered. A mood manipulation by order interaction on digit writing indicated that the depression subjects wrote significantly fewer digits than the neutral subjects only when the digit task was administered first,  $F(1, 33) = 5.78$ ,  $p < .01$ . There were no significant effects for sex of subject on these or any subsequent analyses. Therefore, the data for male and female subjects were combined.

Life Experiences Survey and mood state. One-way analyses of variance (mood state) were computed on positive and negative life change scores derived from the life experiences protocols completed after the mood manipulation. There were no significant effects due to mood state on these measures. One-way analyses were also computed on the number of events on which the impact rating became more positive from the first to the second administration of the LES, the number of events on which the impact became more negative, and the total

number of events on which change occurred. Mood state did not differentially effect any of these measures. Analysis of covariance on the number of events endorsed on the second LES, using events on the first LES as a covariate, also yielded no significant effect. In addition, mood state did not influence the number of units change on the impact rating in either the positive or negative direction. Finally, the number of events on which no change occurred was uninfluenced by the mood induction technique. The means for these variables are presented in Table 1.

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Insert Table 1 about here  
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Sensation seeking, life stress, and mood state. The subject population was divided at the median (median=12) into high and low sensation seekers. Two-way analyses of variance (sensation seeking by mood manipulation) were computed on each of the life change measures described above and on both the Today and the in General forms of the MAACL. The results indicated that low sensation seekers were more anxious in general than high sensation seekers,  $F(1, 33) = 4.13$ ,  $p < .05$ , and that high sensation seekers were more responsive to the mood manipulation than low sensation seekers. Two-way interactions on Today Hostility,  $F(1, 33) = 4.42$ ,  $p < .05$  and on Today Depression,  $F(1, 33) = 8.38$ ,  $p < .001$ , and subsequent pairwise comparisons, showed that high sensation seeking-depression subjects were significantly more depressed and more hostile than low sensation seeking-depression subjects. Within the high sensation seeking group, those subjects in the depression condition were more depressed and hostile than subjects in the neutral or elation conditions. This relationship did not hold among low sensation seekers (see Table 2). Despite the differential sensitivity of high and low sensation seekers to mood manipulations, there were no interactions

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Insert Table 2 about here  
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between sensation seeking and mood manipulation on any of the life stress measures described above.

### Discussion

The findings of the present study provide useful information with regard to the assessment of life change and with regard to one variable which seems to influence the effectiveness of mood manipulations. Consistent with previous research, the data suggest a relationship between the experiencing of life events and depression. More importantly, the results show that experimentally induced mood states do not significantly affect the subsequent reporting of life events or the impact ratings of these events. Comparison of responses on two administrations of the Life Experiences Survey, with the mood induction manipulation intervening, showed no effects due to mood on either positive or negative life change scores, the number of positive or negative events reported, or the impact ratings of these events. Significant differences on the Today form of the MAACL, which followed the administration of the second LES, suggest that the mood manipulation was successful in inducing a particular state. Apparently, however, these mood states were not reflected in responses to the LES.

One of the difficulties inherent in accepting the null hypothesis is the possibility that the experimental manipulation may not have had the intended effect. While the responses to the Today form of the MAACL seem to attest to the effectiveness of the manipulation, the possible role of demand characteristics must also be considered. One alternative explanation for the current findings is that the subjects in this study may have been responding to experimental demand when completing the MAACL and were not actually experiencing the intended mood state. If this were the case, one would not expect responses on the LES to be affected and the conclusion that the LES is unaffected mood states would be premature. There is evidence, however, to counter this interpretation. In



the developmental phase of the mood induction technique, Velten (1967) included two demand control groups in his experimental design. Subjects in his study were instructed to talk themselves into a mood (either elation or depression), but were not put through the procedure of reading the self-referent mood statements. Responses on the subsequent dependent measures, including the Today form of the MAACL, yielded no differences between the elation and depression demand characteristics groups.

A second counterargument to the demand interpretation of the present findings centers on the sensation seeking data. The two-way mood condition by sensation seeking interaction indicated that high sensation seekers were particularly responsive to the mood induction technique when MAACL Today hostility and depression scores were considered as dependent measures. There is no evidence, theoretical or empirical, which might suggest a link between sensation seeking and sensitivity to demand characteristics. The present data do not yield a main effect for sensation seeking or an interaction between sensation seeking and mood manipulation on any of the measures relevant to the Life Experiences Survey. These findings indicate that responses to the LES are not distorted by mood state, even among individuals highly sensitive to mood induction techniques.

The possibility that individuals low in life stress were creating a floor effect on the indices of change from the first to second administration of the LES was also considered. By definition, individuals low in life stress have endorsed relatively few scale items and therefore would not have had the opportunity to change their impact ratings despite the possible effectiveness of the mood manipulation. To explore this possibility, individuals were divided at the median negative life-stress score (median=12) into high and low stress groups. An analysis of variance showed that individuals high in life stress exhibited both more units of change on the LES and more events on which no change occurred (both products of having endorsed a greater number of events), yet there was no relationship between these change scores and the mood



manipulation. It seems safe to conclude, therefore, that responses to the LES are not distorted by mood state.

The findings of the present study suggest that the Life Experiences Survey, a measure of life stress, can assess an individual's subjective response to the experience of life events without being unduly influenced by mood state. This finding is particularly important given that the assessment of life changes is retrospective in nature. This lack of relationship between mood state and responses to the LES also provides some indirect reason to suspect that life stress may in fact result in depression rather than depression simply increasing the probability of reporting life changes. Further research of a longitudinal nature is necessary to determine whether these findings would hold for actual clinical depression as opposed to experimentally induced depression. Finally, the present study supports the effectiveness of Velten's (1968) mood induction technique and further suggests that individuals high in sensation seeking are particularly responsive to such mood manipulations. Despite this sensitivity to the mood manipulation, however, the LES protocols of high sensation seekers were unaffected by mood state, providing further evidence that responses to the LES are not confounded by mood states.

Reference Note

- <sup>1</sup>Velten, E., & DeNike, L. D. Mood induction through experimentally controlled autosuggestion. Unpublished manuscript, University of Southern California, 1966.

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Footnotes

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Table 1

Responses to the Life Experiences Survey as a function of Mood Induction

Variable	<u>Experimental Condition</u>		
	Depression	Neutral	Elation
Positive life change	7.86	7.42	11.85
Negative life change	11.50	8.75	8.46
Number of positive events endorsed	4.50	4.33	5.62
Number of negative events endorsed	6.29	5.50	5.15
Number of events on which impact rating became more positive	1.64	1.67	3.15
Number of events on which impact rating became more negative	2.29	2.67	2.38
Number of units change in positive direction	3.42	6.10	4.79
Number of units change in negative direction	2.50	2.83	6.00

Note: One-way analyses of variance and orthogonal contrasts yielded no significant differences between means on any variable



Table 2

Responses to the Depression Scale of the Today - MAACL as a function of  
Sensation Seeking and Mood Manipulation.

<u>Sensation Seeking</u>	<u>Mood Manipulation</u>		
	<u>Depression</u>	<u>Neutral</u>	<u>Elation</u>
Low	14.00 <sup>a</sup>	13.12 <sup>a</sup>	11.75 <sup>a</sup>
High	23.5 <sup>b</sup>	15.0 <sup>a</sup>	7.8 <sup>a</sup>

Note: Means sharing the same subscript were not significantly different from  
one another.